



Shawn Lee
HES Manager, Richmond Refinery

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BAY AREA AIR QUALITY
MANAGEMENT DISTRICT

January 24, 2018

Mr. Wayne Kino
Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
Attn: Title V Reports

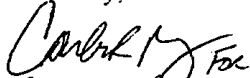
**Six-month Deviation Summary and Six-month Monitoring Report
Submittal by Chevron Richmond Refinery (Plant #0010)
For the Period of June 1, 2017 to December 31, 2017**

Dear Mr. Kino:

Attached are the Chevron Six-month Deviation Summary Report, and the Six-month Monitoring Report for June through December 2017, which meets the requirements of the Title V Permit Standard Condition I. F. and 40 CFR 70.6 as described in the BAAQMD correspondence from Steve Hill to Jim Whiteside dated January 8, 2004.

If you have any questions, please contact Mr. Carlos Perez at (510) 242-4405.

Sincerely,


CARLOS R. PEREZ

Shawn Lee

Attachment

cc: First Name Last Name, Agency/Organization (via e-mail, w/ attach)
First Name Last Name, Agency/Organization (w/o attach)

Health, Environment & Safety
Chevron Products Company
P.O. Box 1272
Richmond, CA 94802 - 0272
Tel 510 242 1400
Fax 510 242 5353
ShawnLee@chevron.com

BAAQMD Title V Permit
6 Month Deviation Summary Report
From 6/1/2017 to 12/31/2017

A0010 Chevron Richmond Refinery

Facility Address:

841 Chevron Way

Mailing Address

PO Box 1272

City: Richmond

City: Richmond

State: CA

State: CA

Zip Code: 94801-

Zip Code: 94802-0272

Contact: Juliana, Robin W

Title: Compliance Technician

Phone: (510) 242-3895

Title V deviations for the reporting period are summarized below:

Event Started: 12/31/2004 11:59 PM

Stopped: _____

☒ Ongoing Event

Discovered On: 1/10/2005

Source Number: _____

Abatement Device : _____

Emission Point: _____

May have resulted in a violation of :

Permit: Title V Permit, Table II.A.3

AQMD: _____

Other: _____

Event Description:

REVISED NOTIFICATION to reflect date & time change: The throughput limit for the Chevron Refinery Long Wharf contained in Table II A.3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A.3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A.3 includes a 12-month throughput limit of 146,628,000 bbls for the sum of all 6 Berths - S-9321, -9322, -9323, -9324, -9325 and -9326. As of January 1, 2005 the actual total throughput of these sources for the previous 12 months was approximately 146,340,000 bbls. Accordingly, based on data for the months January 2004 through December 2004, on January 10, 2005 Chevron determined that these sources exceeded their annual throughput limit listed in Table II A.3 of the refinery's Title V permit.

Pursuant to Standard Condition I.1.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A.3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause:

The refinery has been operating at higher rates in order to meet the increased public demand for refined products, i.e., gasoline, diesel fuel and jet fuel. The refinery's feedstocks and incremental production are both handled at the Long Wharf. The 12-month throughput limit in the Title V Permit was artificially imposed and did not reflect the "as built" capabilities of the systems. No modifications have been made since February, 2000 that affected the wharf's throughput capabilities.

Chevron has reported this to the District as required by the Title V permit.

Corrective actions or preventative steps taken:

Event Started: 7/1/2005
 Stopped: _____
 Discovered On: 7/1/2005

☒ Ongoing Event

Source Number: S1491
 Abatement Device : _____
 Emission Point: _____

May have resulted in a violation of :
 Permit: Title V permit, Table II A 3
 AQMD: _____
 Other: _____

Event Description: REVISED: The throughput limit for the Chevron Refinery Tank 1491 (S#1491) contained in Table II A 3 (Grandfathered Sources) of the Refinery's Title V permit are new limits - they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). Table II A 3 includes a 12-month throughput limit of 1,093,160 bbls for 1491 Tank. As of July 31, 2006 the actual total throughput of this source for the previous 12 months was approximately 1,137,815 bbls. Accordingly, based on data for the months August 2005 through July 2006, Chevron determined that this source exceeded its annual throughput limit listed in Table II A 3 of the Refinery's Title V permit. Pursuant to Standard Condition I.J 2 of the Refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only - it is not an indication of non-compliance with the Refinery's Title V permit.

Probable Cause: T-3073 received gasoline components from two process units and the refinery decided to divert one of these streams to T-1491 (S-1491). T-1491 has contained a number of gasoline components during its life. Although no change occurred with plant operation or capacity, the diverted stream caused an increase in throughput to be seen by T-1491. Immediately prior to its current service, T-1491 contained MTBE/TAME which was the basis for the Title V grandfathered throughput limit. The throughput of the current process stream to T-1491 is much greater than the throughput of MTBE/TAME. No modifications have been made which affect T-1491's throughput capabilities and no modifications were made which enabled the change in service.

Chevron will continue to report this to the District as required by the Title V permit.

Event Started: 11/23/2006 3:00 AM
 Stopped: _____
 Discovered On: 12/4/2006

☒ Ongoing Event

Source Number: S1688
 Abatement Device : _____
 Emission Point: _____

May have resulted in a violation of :
 Permit: Title V Permit Table II A 3
 AQMD: _____
 Other: _____

Event Description: The throughput limits for T-1688 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 5,059,000 bbl for S-1688. As of December 1, 2006 the actual throughput of S-1688 for the past 12 months was 5,206,861 bbl. Accordingly, based on data for the months December 2005 through November 2006, on December 1, 2006, Chevron determined that S-1688 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit.

Pursuant to Standard Condition I.J 2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition.

Event Started: 3/31/2007 11:59 PM
Stopped: ☒ Ongoing Event
Discovered On: 4/2/2007

Source Number: S3071
Abatement Device :
Emission Point:

May have resulted in a violation of :
Permit: Title V Permit Table II A.3
AQMD:
Other:

Event Description: The throughput limits for T3071 contained in Table II A.3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A.3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A.3 includes an annual throughput limit of 8,560,287 bbls. for S-3071. As of March 31, 2007 the actual throughput of S-3071 for the past 12 months was 8,776,309 bbl. Accordingly, based on data for the months April, 2006 through March 2007, on April 2, 2006, Chevron determined that S-3071 exceeded its annual throughput limit listed in Table II A.3 of the refinery's Title V permit.

Pursuant to Standard Condition J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A.3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition.

Event Started: 4/1/2008 12:00 AM
Stopped: ☒ Ongoing Event
Discovered On: 4/1/2008

Source Number: S3104
Abatement Device :
Emission Point:

May have resulted in a violation of :
Permit:
AQMD:
Other:

Event Description: The throughput limits for T3104 contained in Table II A.3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A.3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A.3 includes an annual throughput limit of 22,676,000 bbls. for S-3104. As of March 31, 2007, the actual throughput of S-3104 for the past 12 months was 22,752,328 bbls. Accordingly, based on data for the months of April 2007 through March 2008, on April 1, 2008, Chevron determined that S-3104 exceeded its annual throughput limit listed in Table II A.3 of the refinery's Title V permit.

Pursuant to Standard Condition J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A.3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition.

Event Started: 4/30/2008 11:59 PM	<input checked="" type="checkbox"/> Ongoing Event
Stopped: _____	
Discovered On: 5/1/2008	

Source Number: S3072
Abatement Device: _____
Emission Point: _____

May have resulted in a violation of:
Permit: Title V Permit Table II A.3
AQMD: _____
Other: _____

Event Description: The throughput limits for T3072 contained in Table II A.3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A.3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A.3 includes an annual throughput limit of 2,929,200 bbl. for S-3072. As of April 30, 2008 the actual throughput of S-3072 for the past 12 months was 2,987,253 bbl. Accordingly, based on data for the months May, 2007 through April 2008, on May 1, 2008, Chevron determined that S-3072 exceeded its annual throughput limit listed in Table II A.3 of the refinery's Title V permit.

Pursuant to Standard Condition J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A.3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J.2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition.

Event Started: 6/30/2008 11:59 PM	<input checked="" type="checkbox"/> Ongoing Event
Stopped: _____	
Discovered On: 7/7/2008	

Source Number: S1504
Abatement Device: _____
Emission Point: _____

May have resulted in a violation of:
Permit: _____
AQMD: _____
Other: _____

Event Description: The throughput limits for T1504 contained in Table II A.3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A.3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A.3 includes an annual throughput limit of 602,132 bbls. for S-1504. As of June 30, 2008, the actual annual throughput limit of S-1504 for the past twelve months was 609,294 bbls. Accordingly, based on data for the months of July 2007 through June 2008, on July 7, 2008, Chevron determined that S-1504 exceeded its annual throughput limit listed in Table II A.3 of the refinery's Title V permit.

Pursuant to Standard Condition J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A.3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J.2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition.

Event Started: 1/31/2009 11:59 PM	<input checked="" type="checkbox"/> Ongoing Event
Stopped: _____	
Discovered On: 2/3/2009	

Source Number: S1491
Abatement Device : _____
Emission Point: _____

May have resulted in a violation of :
Permit: Title V Permit Table II.A.3
AQMD: _____
Other: _____

Event Description:

The throughput limits for T-1491 contained in Table II A.3 (Grandfathered Sources) of the refinery's Title V permit are new limits - they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A.3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A.3 includes an annual throughput limit of 1,093,160 bbls. For S-1491. As of January 31, 2009, the actual throughput of S-1491 for the past 12 months was 1,119,918 bbls. Accordingly, based on data for the months of February 2008 through January 2009, on February 3, 2009, Chevron determined that S-1491 exceeded its annual throughput limit in Table II A.3 of the refinery's Title V permit.

Pursuant to Standard Condition J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A.3. Such notice is for reporting purposes only - it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition. ****Already in system.****

Event Started: 5/20/2016 7:00 AM
Stopped: _____
Discovered On: 5/23/2016

☒ Ongoing Event

Source Number: S4285
Abatement Device : A0014
Emission Point: _____

May have resulted in a violation of :
Permit: PC # 11066 part 7A5
AQMD: _____
Other: _____

Event Description: Beginning on May 20, 2016 the FCC electrostatic precipitator (ESP) has begun operating intermittently in a state of deviation with Title V permit condition 11066 part 7(A5) following the commencement of the Refinery's ammonia optimization and demonstration testing protocol per Regulation 6 Rule 5. Per the Air District's approval and direction given on April 12, 2016, the test protocol is conducted under the Air District's Trial Testing Policy and this report is being submitted to capture all potential deviations with the above mentioned permit condition as a result of implementing the testing protocol.

UPDATE:

On June 22, 2017, the BAAQMD agreed to allow the Chevron Richmond Refinery to continue trial testing under the Refinery's Ammonia Optimization and Demonstration Testing Protocol. Per the agreement, the BAAQMD will extend enforcement relief and permit the Refinery to operate outside the requirements of the Title V Permit Condition 11066 # 3A, 3B, 3C, 7A, and 7A5 (and potentially other parts of the permit condition) until issuance of the final ammonia emissions limit. The Refinery will continue to capture all potential deviations as a result of implementing the testing protocol.

Probable Cause: Due to the ongoing FCC stack ammonia optimization testing protocol, the Refinery deviated from BAAQMD permit condition #11066 part 7A5 on the following dates.

Corrective actions or preventative steps taken:

May:

• May 20, 2016 at 07:00 hrs to May 21, 2016 at 03:00 hrs
• May 21, 2016 at 06:00 hrs to May 23, 2016 at 07:00 hrs
• May 25, 2016 at 20:00 hrs to May 26, 2016 at 00:00 hrs
• May 26, 2016 at 18:00 hrs to May 27, 2016 at 00:00 hrs
• May 27, 2016 at 08:00 hrs to May 27, 2016 at 10:00 hrs
• May 28, 2016 at 09:00 hrs to May 28, 2016 at 11:00 hrs
• May 28, 2016 at 21:00 hrs to May 28, 2016 at 22:00 hrs
• May 31, 2016 at 21:00 hrs to May 31, 2016 at 22:00 hrs

June:

• June 6, 2016 at 10:00 hrs to June 6, 2016 at 14:00 hrs
• June 10, 2016 at 20:00 hrs to June 10, 2016 at 21:00 hrs
• June 14, 2016 at 22:00 hrs to June 15, 2016 at 01:00 hrs
• June 15, 2016 at 02:00 hrs to June 15, 2016 at 08:00 hrs
• June 15, 2016 at 12:00 hrs to June 15, 2016 at 19:00 hrs
• June 15, 2016 at 22:00 hrs to June 15, 2016 at 23:00 hrs
• June 16, 2016 at 09:00 hrs to June 17, 2016 at 08:00 hrs
• June 17, 2016 at 20:00 hrs to June 18, 2016 at 09:00 hrs
• June 18, 2016 at 22:00 hrs to June 19, 2016 at 01:00 hrs
• June 20, 2016 at 17:00 hrs to June 25, 2016 at 12:00 hrs
• June 25, 2016 at 20:00 hrs to June 26, 2016 at 11:00 hrs
• June 26, 2016 at 18:00 hrs to June 26, 2016 at 21:00 hrs
• June 27, 2016 at 03:00 hrs to June 27, 2016 at 04:00 hrs
• June 27, 2016 at 05:00 hrs to June 27, 2016 at 11:00 hrs
• June 28, 2016 at 05:00 hrs to June 28, 2016 at 08:00 hrs
• June 28, 2016 at 20:00 hrs to June 29, 2016 at 02:00 hrs
• June 29, 2016 at 19:00 hrs to June 30, 2016 at 12:00 hrs
• June 30, 2016 at 19:00 hrs to July 1, 2016 at 00:00 hrs

July:

- July 1, 2016 at 00:00 hrs to July 1, 2016 at 02:00 hrs
- July 2, 2016 at 09:00 hrs to July 2, 2016 at 10:00 hrs
- July 3, 2016 at 02:00 hrs to July 3, 2016 at 15:00 hrs
- July 4, 2016 at 08:00 hrs to July 4, 2016 at 16:00 hrs
- July 4, 2016 at 22:00 hrs to July 5, 2016 at 00:00 hrs
- July 5, 2016 at 00:00 hrs to July 5, 2016 at 09:00 hrs
- July 6, 2016 at 09:00 hrs to July 6, 2016 at 15:00 hrs
- July 6, 2016 at 18:00 hrs to July 7, 2016 at 00:00 hrs
- July 7, 2016 at 00:00 hrs to July 7, 2016 at 08:00 hrs
- July 7, 2016 at 10:00 hrs to July 7, 2016 at 13:00 hrs

August:

- August 5, 2016 at 06:00 hrs to August 5, 2016 at 07:00 hrs
- August 5, 2016 at 10:00 hrs to August 5, 2016 at 14:00 hrs
- August 8, 2016 at 12:00 hrs to August 8, 2016 at 16:00 hrs
- August 12, 2016 at 21:00 hrs to August 12, 2016 at 22:00 hrs
- August 16, 2016 at 23:00 hrs to August 17, 2016 at 00:00 hrs
- August 17, 2016 at 22:00 hrs to August 18, 2016 at 00:00 hrs
- August 22, 2016 at 11:00 hrs to August 18, 2016 at 13:00 hrs
- August 23, 2016 at 20:00 hrs to August 23, 2016 at 21:00 hrs
- August 26, 2016 at 12:00 hrs to August 26, 2016 at 13:00 hrs
- August 26, 2016 at 20:00 hrs to August 26, 2016 at 21:00 hrs
- August 29, 2016 at 09:00 hrs to August 29, 2016 at 12:00 hrs
- August 29, 2016 at 13:00 hrs to August 29, 2016 at 15:00 hrs
- August 30, 2016 at 17:00 hrs to August 30, 2016 at 23:00 hrs
- August 31, 2016 at 07:00 hrs to September 1, 2016 at 00:00 hrs

September:

- September 1, 2016 at 00:00 hrs to September 1, 2016 at 02:00 hrs
- September 1, 2016 at 03:00 hrs to September 1, 2016 at 07:00 hrs
- September 1, 2016 at 08:00 hrs to September 1, 2016 at 22:00 hrs
- September 3, 2016 at 17:00 hrs to September 5, 2016 at 21:00 hrs
- September 6, 2016 at 03:00 hrs to September 7, 2016 at 20:00 hrs
- September 8, 2016 at 06:00 hrs to September 8, 2016 at 21:00 hrs
- September 9, 2016 at 00:00 hrs to September 9, 2016 at 21:00 hrs
- September 10, 2016 at 00:00 hrs to September 10, 2016 at 17:00 hrs
- September 18, 2016 at 08:00 hrs to September 18, 2016 at 15:00 hrs
- September 20, 2016 at 02:00 hrs to September 20, 2016 at 14:00 hrs
- September 20, 2016 at 20:00 hrs to September 21, 2016 at 15:00 hrs
- September 21, 2016 at 21:00 hrs to September 24, 2016 at 00:00 hrs
- September 24, 2016 at 03:00 hrs to September 25, 2016 at 21:00 hrs
- September 26, 2016 at 02:00 hrs to September 27, 2016 at 16:00 hrs
- September 27, 2016 at 19:00 hrs to September 30, 2016 at 04:00 hrs
- September 30, 2016 at 05:00 hrs to September 30, 2016 at 10:00 hrs
- September 30, 2016 at 16:00 hrs to October 1, 2016 at 00:00 hrs

October:

- October 1, 2016 at 00:00 hrs to October 4, 2016 at 22:00 hrs
- October 4, 2016 at 23:00 hrs to October 7, 2016 at 21:00 hrs
- October 8, 2016 at 05:00 hrs to October 13, 2016 at 19:00 hrs
- October 13, 2016 at 23:00 hrs to October 15, 2016 at 07:00 hrs
- October 15, 2016 at 09:00 hrs to October 17, 2016 at 01:00 hrs
- October 17, 2016 at 09:00 hrs to October 21, 2016 at 18:00 hrs

•October 22, 2016 at 00:00 hrs to October 22, 2016 at 21:00 hrs
•October 23, 2016 at 00:00 hrs to October 23, 2016 at 06:00 hrs
•October 23, 2016 at 10:00 hrs to October 24, 2016 at 20:00 hrs
•October 24, 2016 at 22:00 hrs to October 25, 2016 at 20:00 hrs
•October 25, 2016 at 22:00 hrs to October 26, 2016 at 19:00 hrs
•October 26, 2016 at 21:00 hrs to October 30, 2016 at 00:00 hrs
•October 30, 2016 at 03:00 hrs to October 31, 2016 at 19:00 hrs

November:

•November 1, 2016 at 03:00 hours to November 2, 2016 at 10:00 hours
•November 2, 2016 at 13:00 hours to November 11, 2016 at 19:00 hours
•November 11, 2016 at 20:00 hours to November 22, 2016 at 09:00 hours
•November 22, 2016 at 19:00 hours to December 1, 2016 at 00:00 hours

December:

•December 1, 2016 at 00:00 hrs to December 6, 2016 at 08:00 hrs
•December 6, 2016 at 10:00 hrs to December 7, 2016 at 08:00 hrs
•December 7, 2016 at 10:00 hrs to December 7, 2016 at 22:00 hrs
•December 8, 2016 at 07:00 hrs to December 9, 2016 at 16:00 hrs
•December 10, 2016 at 00:00 hrs to December 10, 2016 at 17:00 hrs
•December 10, 2016 at 20:00 hrs to December 16, 2016 at 07:00 hrs
•December 16, 2016 at 08:00 hrs to December 18, 2016 at 02:00 hrs
•December 18, 2016 at 05:00 hrs to January 1, 2016 at 00:00 hrs

January 2017:

•January 1, 2017 at 00:00 hours to January 26, 2017 at 20:00 hours
•January 27, 2017 at 00:00 hours to January 31, 2017 at 12:00 hours
•January 31, 2017 at 14:00 hours to January 31, 2017 at 16:00 hours
•January 31, 2017 at 19:00 hours to February 1, 2017 at 00:00 hours

February 2017:

•February 1, 2017 at 00:00 hours to February 26, 2017 at 19:00 hours
•February 27, 2017 at 00:00 hours to February 28, 2017 at 23:00 hours

March 2017:

•March 1, 2017 at 00:00 hours to March 2, 2017 at 01:00
•March 2, 2017 at 06:00 hours to March 4, 2017 at 13:00
•March 4, 2017 at 15:00 hours to March 10, 2017 at 00:00
•March 10, 2017 at 06:00 hours to March 10, 2017 at 22:00
•March 11, 2017 at 00:00 hours to March 25, 2017 at 05:00
•March 25, 2017 at 10:00 hours to March 25, 2017 at 12:00
•March 25, 2017 at 15:00 hours to March 25, 2017 at 16:00
•March 25, 2017 at 19:00 hours to March 26, 2017 at 01:00
•March 26, 2017 at 10:00 hours to March 26, 2017 at 11:00
•March 26, 2017 at 12:00 hours to March 26, 2017 at 15:00
•March 26, 2017 at 21:00 hours to March 28, 2017 at 17:00
•March 28, 2017 at 18:00 hours to March 31, 2017 at 22:00

April 2017:

•April 1, 2017 at 00:00 hours to April 1, 2017 at 03:00
•April 1, 2017 at 07:00 hours to April 1, 2017 at 20:00
•April 1, 2017 at 22:00 hours to April 2, 2017 at 21:00
•April 3, 2017 at 01:00 hours to April 3, 2017 at 18:00
•April 4, 2017 at 09:00 hours to April 6, 2017 at 16:00

•April 6, 2017 at 19:00 hours to April 9, 2017 at 22:00
•April 10, 2017 at 01:00 hours to April 10, 2017 at 18:00
•April 10, 2017 at 22:00 hours to April 13, 2017 at 22:00
•April 14, 2017 at 04:00 hours to April 14, 2017 at 20:00
•April 15, 2017 at 00:00 hours to April 16, 2017 at 11:00
•April 16, 2017 at 14:00 hours to April 19, 2017 at 16:00
•April 19, 2017 at 20:00 hours to April 20, 2017 at 09:00
•April 20, 2017 at 10:00 hours to April 24, 2017 at 06:00
•April 24, 2017 at 08:00 hours to April 26, 2017 at 18:00
•April 26, 2017 at 20:00 hours to April 27, 2017 at 17:00
•April 27, 2017 at 21:00 hours to April 29, 2017 at 21:00
•April 29, 2017 at 23:00 hours to May 1, 2017 at 00:00

May 2017

•May 1, 2017 at 00:00 hours to May 7, 2017 at 19:00
•May 7, 2017 at 23:00 hours to May 9, 2017 at 19:00
•May 9, 2017 at 22:00 hours to May 10, 2017 at 13:00
•May 10, 2017 at 14:00 hours to May 10, 2017 at 21:00
•May 12, 2017 at 10:00 hours to May 13, 2017 at 18:00
•May 13, 2017 at 21:00 hours to May 16, 2017 at 00:00
•May 16, 2017 at 10:00 hours to May 16, 2017 at 14:00
•May 16, 2017 at 18:00 hours to May 17, 2017 at 06:00
•May 17, 2017 at 08:00 hours to May 17, 2017 at 11:00
•May 17, 2017 at 22:00 hours to May 19, 2017 at 04:00
•May 19, 2017 at 07:00 hours to May 19, 2017 at 20:00
•May 19, 2017 at 21:00 hours to May 21, 2017 at 18:00
•May 21, 2017 at 21:00 hours to May 23, 2017 at 16:00
•May 23, 2017 at 22:00 hours to May 27, 2017 at 05:00
•May 27, 2017 at 13:00 hours to May 29, 2017 at 01:00
•May 29, 2017 at 13:00 hours to May 29, 2017 at 18:00
•May 29, 2017 at 19:00 hours to May 30, 2017 at 02:00
•May 30, 2017 at 10:00 hours to June 1, 2017 at 00:00

June 2017

•June 1, 2017 at 00:00 hours to June 2, 2017 at 20:00
•June 3, 2017 at 00:00 hours to June 12, 2017 at 11:00
•June 12, 2017 at 13:00 hours to June 13, 2017 at 07:00
•June 13, 2017 at 16:00 hours to June 17, 2017 at 01:00
•June 17, 2017 at 12:00 hours to June 18, 2017 at 06:00
•June 18, 2017 at 13:00 hours to June 19, 2017 at 12:00
•June 19, 2017 at 13:00 hours to June 23, 2017 at 15:00
•June 23, 2017 at 22:00 hours to June 24, 2017 at 18:00
•June 24, 2017 at 20:00 hours to June 26, 2017 at 02:00
TR sets were shutdown from June 24, 2017 2050 hours; RCA # 07D72
•June 26, 2017 at 16:00 hours to June 26, 2017 at 22:00
•June 27, 2017 at 03:00 hours to June 27, 2017 at 13:00
•June 28, 2017 at 01:00 hours to July 1, 2017 at 00:00

July 2017

•July 1, 2017 at 00:00 hours to July 7, 2017 at 22:00 hours
•July 8, 2017 at 07:00 hours to July 8, 2017 at 09:00 hours
•July 8, 2017 at 21:00 hours to July 9, 2017 at 23:00 hours
•July 10, 2017 at 00:00 hours to July 10, 2017 at 15:00 hours
•July 10, 2017 at 18:00 hours to July 12, 2017 at 12:00 hours

•July 12, 2017 at 14:00 hours to July 12, 2017 at 22:00 hours
•July 13, 2017 at 03:00 hours to July 14, 2017 at 00:00 hours
•July 14, 2017 at 10:00 hours to July 15, 2017 at 00:00 hours
•July 15, 2017 at 12:00 hours to July 15, 2017 at 20:00 hours
•July 16, 2017 at 00:00 hours to July 16, 2017 at 2:00 hours
•July 16, 2017 at 0800 hours to July 16, 2017 at 11:00 hours
•July 16, 2017 at 14:00 hours to July 16, 2017 at 23:00 hours
•July 17, 2017 at 04:00 hours to July 17, 2017 at 11:00 hours
•July 18, 2017 at 01:00 hours to July 19, 2017 at 23:00 hours
•July 20, 2017 at 13:00 hours to July 21, 2017 at 02:00 hours
•July 21, 2017 at 12:00 hours to July 22, 2017 at 23:00 hours
•July 23, 2017 at 14:00 hours to July 23, 2017 at 17:00 hours
•July 24, 2017 at 02:00 hours to July 24, 2017 at 07:00 hours
•July 24, 2017 at 11:00 hours to July 24, 2017 at 13:00 hours
•July 24, 2017 at 16:00 hours to July 24, 2017 at 20:00 hours
•July 25, 2017 at 07:00 hours to July 25, 2017 at 08:00 hours
•July 25, 2017 at 12:00 hours to July 25, 2017 at 23:00 hours
•July 26, 2017 at 15:00 hours to July 29, 2017 at 10:00 hours
•July 29, 2017 at 15:00 hours to August 1, 2017 at 00:00 hours

August 2017

•August 1, 2017 at 00:00 hours to August 1, 2017 at 17:00
•August 1, 2017 at 22:00 hours to August 2, 2017 at 15:00
•August 2, 2017 at 18:00 hours to August 3, 2017 at 13:00
•August 3, 2017 at 15:00 hours to August 4, 2017 at 02:00
•August 4, 2017 at 07:00 hours to August 6, 2017 at 07:00
•August 6, 2017 at 14:00 hours to August 13, 2017 at 18:00
•August 13, 2017 at 23:00 hours to August 14, 2017 at 21:00
•August 15, 2017 at 07:00 hours to August 15, 2017 at 10:00
•August 15, 2017 at 14:00 hours to August 15, 2017 at 19:00
•August 15, 2017 at 23:00 hours to August 17, 2017 at 21:00
•August 18, 2017 at 01:00 hours to August 20, 2017 at 16:00
•August 20, 2017 at 19:00 hours to August 20, 2017 at 21:00
•August 21, 2017 at 00:00 hours to August 21, 2017 at 22:00
•August 22, 2017 at 01:00 hours to August 22, 2017 at 12:00
•August 22, 2017 at 14:00 hours to August 22, 2017 at 19:00
•August 23, 2017 at 02:00 hours to August 24, 2017 at 16:00
•August 24, 2017 at 20:00 hours to August 24, 2017 at 21:00
•August 26, 2017 at 07:00 hours to August 27, 2017 at 05:00

September 2017

•September 14, 2017 at 07:00 hours to September 14, 2017 at 10:00 hours
•September 14, 2017 at 12:00 hours to September 14, 2017 at 14:00 hours
•September 16, 2017 at 22:00 hours to September 17, 2017 at 01:00 hours
•September 17, 2017 at 19:00 hours to September 17, 2017 at 22:00 hours
•September 18, 2017 at 08:00 hours to September 18, 2017 at 10:00 hours
•September 18, 2017 at 20:00 hours to September 19, 2017 at 05:00 hours
•September 19, 2017 at 07:00 hours to September 19, 2017 at 14:00 hours
•September 19, 2017 at 19:00 hours to September 19, 2017 at 22:00 hours
•September 22, 2017 at 14:00 hours to September 22, 2017 at 16:00 hours
•September 26, 2017 at 13:00 hours to September 26, 2017 at 18:00 hours
•September 27, 2017 at 08:00 hours to September 27, 2017 at 10:00 hours
•September 27, 2017 at 21:00 hours to September 27, 2017 at 22:00 hours
•September 28, 2017 at 09:00 hours to September 28, 2017 at 10:00 hours

- September 30, 2017 at 09:00 hours to September 30, 2017 at 11:00 hours
- September 30, 2017 at 21:00 hours to September 30, 2017 at 23:00 hours

October 2017

- October 2, 2017 at 11:00 hours to October 2, 2017 at 12:00 hours
- October 2, 2017 at 20:00 hours to October 3, 2017 at 02:00 hours
- October 6, 2017 at 10:00 hours to October 6, 2017 at 11:00 hours
- October 6, 2017 at 21:00 hours to October 6, 2017 at 23:00 hours
- October 7, 2017 at 03:00 hours to October 7, 2017 at 16:00 hours
- October 7, 2017 at 17:00 hours to October 7, 2017 at 22:00 hours
- October 9, 2017 at 00:00 hours to October 9, 2017 at 02:00 hours
- October 9, 2017 at 06:00 hours to October 9, 2017 at 08:00 hours
- October 9, 2017 at 09:00 hours to October 10, 2017 at 10:00 hours
- October 10, 2017 at 20:00 hours to October 10, 2017 at 23:00 hours
- October 11, 2017 at 07:00 hours to October 11, 2017 at 11:00 hours
- October 11, 2017 at 20:00 hours to October 12, 2017 at 11:00 hours
- October 12, 2017 at 14:00 hours to October 13, 2017 at 05:00 hours
- October 14, 2017 at 11:00 hours to October 14, 2017 at 12:00 hours
- October 14, 2017 at 22:00 hours to October 16, 2017 at 23:00 hours (See RCA# 07E90 for excursion notification)
- October 30, 2017 at 15:00 hours to October 30, 2017 at 17:00 hours (See RCA# 07F20 for excursion notification)

November 2017

- None

December 2017

- None

FCC NH3 Optimization, Reg 6-5, trial testing is being conducted and still ongoing.

Event Started: 1/17/2017 9:07 AM
 Stopped: _____
☒ Ongoing Event
 Discovered On: 1/17/2017

Source Number: S4285
 Abatement Device : _____
 Emission Point: _____

May have resulted in a violation of :
 Permit: _____
 AQMD: _____
 Other: 40 CFR 63.1564

Event Description: On January 12, 2017 from 0907 hours to 1421 hours, the FCC (S-4285) operated above its limit of 20% opacity for a consecutive 3-hour period. This indicated excess occurred during the Refinery's (BAAQMD 6-5) Ammonia Optimization and Demonstration Testing Protocol. Per the agreement made on April 12, 2016 between the Refinery and the BAAQMD, the test protocol is conducted under the Air District's Trial Testing Policy and this notification is being submitted to capture all potential deviations as a result of implementing the testing protocol. UPDATE:
 On June 27, 2017, the BAAQMD agreed to allow the Chevron Richmond Refinery to continue trial testing under the Refinery's Ammonia Optimization and Demonstration Testing Protocol. Per the agreement, the BAAQMD will extend enforcement relief and permit the Refinery to operate outside the requirements of the Title V Permit Condition 11066 #3A, 3B, 3C, 7A, and 7A5 (and potentially other parts of the permit condition) until issuance of the final ammonia emissions limit. The Refinery will continue to capture all potential deviations as a result of implementing the testing protocol.

Probable Cause: Due to the ongoing FCC stack ammonia optimization testing protocol, the Refinery deviated from 40 CFR 63.1564 on the following dates.
 Corrective actions or preventative steps taken:

- January 2017
- January 17, 2017 from 0907 hours to 1421 hours
- February 2017
- None
- March 2017
- None
- April 2017
- None
- May 2017
- None
- June 2017
- None
- July 2017
- None
- August 2017
- None
- September 2017
- None
- October 2017
- None
- November 2017
- None



December 2017

- None

FCC NH3 Optimization, Regulation 6-5, trial testing is being conducted and still ongoing.

Event Started: <u>12/20/2016</u>	<input checked="" type="checkbox"/> Ongoing Event
Stopped: _____	
Discovered On: <u>3/21/2017</u>	

Source Number: <u>S4349</u>
Abatement Device: _____
Emission Point: _____

May have resulted in a violation of:
Permit: <u>#469 Part 6 subpart E2 and E3</u>
AQMD: _____
Other: _____

Event Description: On March 21, 2017, furnace F-1650 (S-4349) was discovered to potentially be operating above its required 3-hr average NOx limit of 20 ppmv corrected to 3% O₂ and its 8-hr average CO limit of 50 ppmv corrected to 3% O₂ as specified in Title V Permit Condition #469 Part 6 Subpart E2 and E3. Chevron is submitting this 10-day deviation in abundance of caution and efforts to decrease NOx and CO are underway. Additionally, Chevron is scheduling a source test for F-1650 (S-4349) as soon as feasible, subject to source test contractor availability and District notification requirements.

Probable Cause: Chevron undertook a source test on April 7, 2017, with results of 12.7 ppmv CO corrected to 3% O₂ and 39.5 ppmv NOx corrected to 3% O₂. The furnace is operating at approximately one-third of fired duty when compared to operation prior to turnaround activity.

Corrective actions or preventative steps taken:

The purpose of the Heavy Neutral Hydrofinisher (HNF) Plant (S-4343) is to Isodewax and Hydrofinish waxy oils to produce finished tube oil base stocks. During the 2016 4th Quarter RLOP Major Turnaround repairs were made to damaged internals of the Vacuum Stripper, C-1650, located in the HNF Plant. To maintain the mechanical integrity of C-1650, the facility implemented a replacement of the column's packing and liquid distributor, and installed a steam sparger. After the turnaround, the Vacuum Stripper Feed Furnace, F-1650 (S-4349), which heats the feed to C-1650 has to operate at lower firing rates, which results in a lower outlet temperature.

After discovery of the potential for increased NOx and CO concentrations noted above, Chevron undertook immediate steps, including support outside of normal working hours, to address the NOx and CO concentrations. Several recently-taken readings indicate concentration levels within limits but Chevron desires to ensure that operation under anticipated long-term operations scenarios will be consistently within the concentration limits. The company is going to be contacting the District to discuss corrective actions and the best path forward to address these complex technical issues. The company is also scheduling a source test to confirm the readings it has been taking.

Chevron undertook an additional source test on May 3, 2017 to validate if the preliminary mitigation efforts could sustain reductions in NOx and CO while operating at the current lower firing duty. The efforts included but were not limited to, installation of burner block plates, sealing of out of service burners and adjustments to stack damper and air registers. Despite the initial troubleshooting activities, F-1650 continues to operate with elevated CO and NOx (as NO₂) when compared to concentrations prior to the 2016 RLOP Major Turnaround. Nevertheless, both NOx and CO mass emissions are below the corresponding potential to emit of F-1650, calculated based on the permitted firing rate and concentration limits.

Chevron met with the Air District Inspector on May 16, 2017 to discuss its continued efforts to address the increased NOx and CO concentrations from F-1650, and develop a compliance plan and schedule that could be memorialized in a Compliance and Settlement Agreement. Chevron has developed a project team to evaluate several long-term solutions, including among others, addressing burner design, catalyst, and tube insulation that could potentially resolve the situation, while also meeting the operational standards for the process over the long term. As Chevron moves forward on steps to resolve the deviations, the company continues to communicate with the District about memorializing the approach to achieving resolution in an agreement.

Chevron met with Air District Inspector Quentin Malloy, and Supervisor Ron Pilkington on May 25, 2017 to review the proposed Compliance and Settlement Agreement. Following discussions at that meeting, several requested changes have been made to the Compliance and Settlement Agreement and an updated version resubmitted on June 9, 2017. Chevron continues to work toward a resolution of the deviations, and continues to communicate with the District to attain an approved Compliance and Settlement agreement.

Discussions with the Air District are ongoing working toward a Compliance and Settlement agreement. Chevron continues to work toward a resolution of the deviations and is closely monitoring F-1650 to ensure optimized operation.

A Compliance and Settlement agreement between Chevron and the Air District was attained on August 1, 2017.

As outlined in the C&E agreement attained August 1, 2017 a case study was completed on August 15, 2017 and a selection of a proposed option was chosen by the September 15, 2017 due date.

Per the Compliance and Settlement Agreement and the Action Plan due date change email from District legal counsel Adam Schwartz, the Action Plan has been submitted on October 20th, 2017. Field testing of the alternate burner tips is ongoing.

C&E agreement termination letter received October 20, 2017.

Variance submitted on October 27, 2017.

November 3, 2017 - Met with Air District to discuss Termination letter and review progress to date.

November 13, 2017 - BAAQMD site visit to tour furnace F-1650

November 16, 2017 - BAAQMD meeting to review data and discuss path forward

All three F-1650 alternate burner tips were removed and replaced with original burner tips the week of October 30, 2017.

Permit to Operate was issued on January 17, 2018 by Bay Area Air Quality Engineering Manager.

A Compliance and Settlement agreement between Chevron and the Air District was attained on January 18, 2018.

Event Started:	6/6/2017	2:50 PM
Stopped:	6/6/2017	3:39 PM
Discovered On:	6/6/2017	<input type="checkbox"/> Ongoing Event

Source Number:	S6016
Abatement Device:	
Emission Point:	

May have resulted in a violation of:	
Permit:	
AQMD:	
Other:	40 CFR Subpart J (60.104(a)(1)

Event Description: On June 6th, 2017 flaring occurred at the FCC flare (S-6016) and RLOP flare (S-6039) when relief system flows exceeded the capacity of the in service flare gas recovery compressor, K-1060. The flaring deviated from 40 CFR 60 Subpart J (60.104(a)(1)) because it was not due to a startup, shutdown, or malfunction, and the vent gas did not have a hydrogen sulfide concentration below 230 mg/dscm (0.10 gr/dscf).

Probable Cause: On June 2, 2017, K-1060 one of the two flare gas recovery compressors, was taken out of service for necessary repairs due to hot discharge temperatures. K-1060 repairs were expedited on a "break-in" priority, and the compressor was returned to service on June 9, 2017. During this time, on June 6th, 2017, increased flow to the relief system through V-705 exceeded the capacity of the one in-service compressor, K-1070, and the flaring incident occurred. If the K-1060 malfunction would not have occurred, with both compressors in service, the relief flows would have been within their recovery capacity and there would not have been flaring. An extensive investigation of the incident has not been able to identify the specific source of increased flow to V-705.

K-1060 repairs were expedited and the compressor was returned to service June 9, 2017. The investigation is ongoing to identify the specific source that led to the flaring.

Corrective actions or preventative steps taken:

Event Started: 6/24/2017 8:00 PM
Stopped: 6/25/2017 11:59 PM ☐ Ongoing Event
Discovered On: 6/24/2017

Source Number: S4285
Abatement Device : A0014
Emission Point: _____

May have resulted in a violation of :
Permit: Title V PC 11066 (7)(a5)
AQMD: _____
Other: _____

Event Description:

Subsequent to an unexpected shutdown of the Refinery's Fluid Catalytic Cracking (FCC) unit (S-4285) on June 24, 2017 at 19:30 hours, the FCC's Electrostatic Precipitator (ESP) required an emergency shutdown at approximately 20:15 hours. As a result, the ESP was operating with greater than 2 TR sets below 200mA and with the remaining TR sets averaged less than 296mA over a 3-hr period. This occurred from the 2000 hour on June 24, 2017 through the 2300 hour on June 25, 2017. The TR sets were de-energized as required per process safety best practices.

Probable Cause:

On June 24, 2017 Operations was in the process of warming up C-90 Main Fractionator Bottoms, P-105. Subsequent to opening the suction manual block valve on P-105, flow was lost on all three of the Main Fractionator Bottoms pumps P-105/A/B. Operations was unable to re-establish flow and the level in C-90 continued to rise. Once the level in C-90 reached 80%, and to avoid a complete trip of the plant, feed was pulled from the unit at approximately 1930 hours. To address any potential hydrocarbon, carry over into the Electrostatic Precipitator (ESP) the TR sets were immediately de-energized at 2015 hours. This is a Chevron Best Practice to avoid a potential unsafe atmosphere in the ESP that could potentially be ignited by an electrical spark. Feed was introduced back into the unit on June 25, 2017 at 1050 hours and the TR sets were placed back in service on June 25, 2017 at 2050 hours.

The TR sets were placed back in service on June 25, 2017 at approximately 2050 hours.

Event Started: 6/28/2017 3:06 PM
Stopped: 6/28/2017 3:08 PM ☐ Ongoing Event
Discovered On: 6/28/2017

Source Number: S6016
Abatement Device : _____
Emission Point: _____

May have resulted in a violation of :
Permit: _____
AQMD: _____
Other: 40 CFR Subpart J (60.104(a)(1

Event Description:

On June 28th, 2017 flaring occurred at the FCC Flare (S-6016), NISO Gas (S-6013), and SISO Flare (S-6012) when relief system flows exceeded the capacity of flare gas recovery resulting in visible flaring. The flaring deviated from 40 CFR 60 Subpart J (60.104(a)(1)) because it was not due to a startup, shutdown, or malfunction, and the vent gas did not have a hydrogen sulfide concentration below 220 mg/dscm (0.10gr/dscf).

Probable Cause:

Relief system flows momentarily exceeded the capacity of the Flare Gas Recovery Compressor resulting in visible flaring. An extensive review of process trends during the investigation identified that the flow to the relief system came through V-705, but the originating source of flow has not been definitively identified.

Corrective actions or preventative steps taken:

Operations immediately responded to identify the source and optimize the flare gas compressor operations. The investigation is ongoing to identify the source that led to the flaring.

Event Started: 6/28/2017 8:00 PM ☐ Ongoing Event
 Stopped: 6/28/2017 8:01 PM
 Discovered On: 6/28/2017

Source Number: S6016
 Abatement Device :
 Emission Point:

May have resulted in a violation of :
 Permit:
 AQMD:
 Other: 40 CFR Subpart J (60.104(a)(1)

Event Description: On June 28th, 2017 flaring occurred at the FCC Flare (S-6016) from approximately 2000 hours through 2001 hours when relief system flows exceeded the capacity of flare gas recovery resulting in visible flaring. The flaring deviated from 40 CFR 60 Subpart J (60.104(a)(1)) because it was not due to a startup, shutdown, or malfunction, and the vent gas did not have a hydrogen sulfide concentration below 230 mg/dscm (0.10gr/dscf).

Probable Cause: Relief system flows momentarily exceeded the capacity of the Flare Gas Recovery Compressor resulting in visible flaring. An extensive review of process trends during the investigation identified that the flow to the relief system came through V-705, but the originating source of flow has not been definitively identified.

Corrective actions or preventative steps taken: Operations immediately responded to identify the source and optimize the flare gas compressor operations. The investigation is ongoing to identify the source that led to the flaring.

Event Started: 6/30/2017 4:42 PM
 Stopped: 6/30/2017 4:43 PM ☐ Ongoing Event
 Discovered On: 6/30/2017

Source Number: S6016
 Abatement Device :
 Emission Point:

May have resulted in a violation of :
 Permit:
 AQMD:
 Other: 40 CFR Subpart J (60.104(a)(1)

Event Description: On June 30th, 2017 flaring occurred at the FCC Flare (S-6016), when relief system flows exceeded the capacity of flare gas recovery resulting in visible flaring. The flaring deviated from 40 CFR 60 Subpart J (60.104(a)(1)) because it was not due to a startup, shutdown, or malfunction, and the vent gas did not have a hydrogen sulfide concentration below 230 mg/dscm (0.10gr/dscf).

Probable Cause: On June 30, 2017 Relief system flows momentarily exceeded the capacity of the Flare Gas Recovery Compressor resulting in visible flaring from 16:42hrs to 16:43 hrs. An extensive review of process trends during the investigation identified that the flow to the relief system came through V-705, but the originating source of flow has not been definitively identified.

Corrective actions or preventative steps taken: Operations immediately responded to identify the source and optimize the flare gas compressor operations. The investigation is ongoing to identify the source that led to the flaring.

Event Started:	6/24/2017 9:31 PM	<input type="checkbox"/> Ongoing Event
Stopped:	6/24/2017 9:32 PM	
Discovered On:	7/5/2017	

Source Number:	S6016
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	
Other:	40 CFR Subpart J (60.104(a)(1)

Event Description:

UPDATE:

On June 24th, 2017 from 2131 through 2132 hours flaring occurred at the FCC Flare (S-6016). It was discovered on July 5, 2017 that the flaring deviated from 40 CFR 60 Subpart J (60.104(a)(1)) because it was not due to a startup, shutdown, or malfunction, and the vent gas did not have a hydrogen sulfide concentration below 230 mg/dscm (0.10g/dscf).

Probable Cause:
Corrective actions or
preventative steps taken:

On June 24, 2017 at approximately 1900 hours Operations was in the process of warming up P-105 Main Fractionator Bottoms pump. Subsequent to opening the manual block valve on the P-105 suction line, flow was lost on all C-90 bottoms pumps, P-105A/B. This was due to the failure of the block valve on the discharge line of P-105. Operations was unable to immediately re-establish flow through the P-105 and the level in the Main Fractionator, C-90 began to rise. Once the level in C-90 reached 80% and flow had not been re-established the Operations initiated the emergency shutdown procedure. This was done to avoid an automatic shutdown of the plant, the unit's safety interlock system would have tripped the plant once the level in C-90 reached 90%. During the process of shutting down the plant, Operations was lowering pressure at C-90. At approximately 2131 hours pressure controller 52PC100A opened to relief resulting in visible flaring.

C-90 is designed with a split range control system (52PC100A and 52PC100B). When pressure controller 52PC100A goes above it's set point it will open and vent to the flare gas recovery system, and when 52PC100B drops below it's set point natural gas is introduced to increase pressure. To maintain the system pressure balance during shutdown activities the set points on both controllers are lowered simultaneously in increments of .2 psia. It was later discovered that a couple of decreases were inadvertently missed when lowering 52PC100B, causing 52PC100A to open to relief. Operational moves were made to minimize flaring for a duration of two minutes.

Operational moves were made to minimize flaring for a duration of two minutes. Training took place with the operator to review the emergency shutdown procedure. Additionally, the importance and criticality of following procedures was emphasized to the operator.

Event Started:	7/4/2017	<input type="checkbox"/> Ongoing Event
Stopped:	7/5/2017	
Discovered On:	7/5/2017	

Source Number:	
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	Standard Conditions I.F
AQMD:	
Other:	

Event Description:

On July 5, 2017 a Title V deviation report was submitted to the BAAQMD for the ESP operating with greater than 2 TR sets below 200ma from June 24, 2017 at 2200 hours through June 25, 2017 at 2300 hours. As this Title V Deviation report had a due date falling on a national holiday, July 4, 2017, the report was submitted the following business day on July 5, 2017.

Probable Cause:
Corrective actions or
preventative steps taken:

The due date for submittal of the Title V deviation report was July 4, 2017, ten calendar days from June 24, 2017. Since the due date fell on a national holiday the report was submitted the following business day on July 5, 2017.
The Title V Deviation was submitted on July 5, 2017.

Event Started:	7/14/2017	<input type="checkbox"/> Ongoing Event
Stopped:	7/14/2017	
Discovered On:	7/20/2017	

Source Number:	
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	469 part 6E
AQMD:	2-1-301
Other:	

Event Description: On July 20, 2017 during data review it was discovered that on July 14, 2017 F-1410 (S-4336) exceeded its daily firing rate limit of 600 MMBTU/D HHV.

Probable Cause: F-1410 exceeded its daily Title V Limit during a startup of the RLOP unit HNC (S-4342) following an unplanned shutdown. Due to the expedited shutdown of the plant a higher temperature was required in the reactors as compared to a typical start-up in order to properly prepare the catalyst for operation. This required firing the furnace at higher rates for a longer period of time than a typical start-up and operations was unaware that the firing limit is not exempt during a startup of the unit.

The Refinery is revising its alarm strategy, notification protocol, and procedures for F-1410 and the HNC to prevent future occurrences.

Event Started:	7/23/2017	<input type="checkbox"/> Ongoing Event
Stopped:	7/24/2017	
Discovered On:	7/23/2017	

Source Number:	
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	Rule 2-1-302.1 & 2-1-307
Other:	

Event Description: On August 29, 2016, the BAAQMD issued a renewed Authority to Construct (ATC) for the carbon abatement drums (A-632) at Pump Station No. 21. Under the ATC, Chevron is required to submit a Start-up Notification to the BAAQMD at least seven days prior to operating the equipment. However, on July 23, 2017, the 21- pump station thermal oxidizer (A-623) shutdown due to low vacuum. In an attempt to mitigate emissions, the operator on crew placed the standby carbon drums in service, unaware of the current regulatory restriction. At the time of operation, only one of the two carbon drum trains were complete per the permit condition (Condition No. 25835 specifies that A-632 will consist of 2 sets of 3 carbon drums). Consequently, the carbon drums were operated without prior notification to the BAAQMD or a permit to operate. On July 24, 2017 it was discovered that the drums were operated and were immediately taken out of service. ACTG conducted VOC inspections while the thermal-oxidizer was down with no excess emissions observed.

Probable Cause: On July 23, 2017, the 21- pump station thermal oxidizer (A-623) shutdown due to low vacuum. As operators begin troubleshooting, the stream was routed to the backup carbon drums. As with similar systems, back-up carbon drums are used in cases where the primary abatement device has failed and troubleshooting is ongoing. However, at the time of operation, only one of the two carbon drum trains were complete and the start-up notification to the Air District was not submitted. It was found that the operating constraint on the carbon drums was not adequately communicated to the operators and mitigation techniques were not timely recognized to prevent the use of the carbon drums. At the time of the thermal oxidizer failure, the Air Compliance Inspection Group (ACIG) was contacted to conduct Method 21 monitoring on the associated pump seals. All pump seals passed inspection with no leak detection above 100ppm.

On July 24, 2017, it was discovered that the drums were operated, then were immediately taken out of service. Discussions were held with all operating crews on the conditions of use until the construction is complete and the startup notification is submitted to the BAAQMD. The carbon drum inlet valve has been tagged to control future use.

Event Started:	8/5/2017
Stopped:	8/5/2017 <input type="checkbox"/> Ongoing Event
Discovered On:	8/5/2017

Source Number:	S9322
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	8-44-305.3
Other:	

Event Description: On August 5, 2017, the Refinery discovered that the VOC inspections required by 8-44-305.3 were missed while loading a tanker vessel at the Richmond Long Wharf.

Probable Cause: On August 5, 2017, the Refinery discovered that VOC inspections were inadvertently missed while the Florida Voyager was loading regulated cargo. VOC inspections are routinely generated by the Vapor designation on the Wharf Boat Sheet form, which is sent to a 3rd party VOC inspection contractor. Upon receipt, the VOC inspector is dispatched to the Richmond Long Wharf control room to check-in and confirm vessel inspections with operations. An investigation into the incident discovered the decision to load the Florida Voyager was not made until late in the evening, after the Wharf Boat Sheet had already been sent to the VOC inspection contractor. Upon arrival to the operation control room, the contractor assigned to perform the VOC inspections had the outdated ship schedule which did not list the Florida Voyager as needing to be inspected. It was not discovered until after the ship had completed loading that a VOC inspection receipt had not been given to operations.

The Refinery has conducted meetings with the Operators to discuss the incident and confirm that all employees understand the expectation for procedure adherence, and verification of correct documentation prior to loading cargo. The vessel coordinator will be accountable to ensure that all updated information is communicated to the 3rd party VOC inspectors prior to arrival and will validate that Operators has been informed of change.

Event Started: 8/4/2017	<input type="checkbox"/> Ongoing Event
Stopped: 8/9/2017	
Discovered On: 8/8/2017	

Source Number: S4285
Abatement Device :
Emission Point:

May have resulted in a violation of :
Permit:
AQMD: BAAQMD 1-522.4
Other:

Event Description: On August 2, 2017, a Cylinder Gas Audit (CGA) was performed on the FCC O₂ analyzer as required per 40 CFR Part 60 App F 5.1.2. The Chevron Richmond Refinery was notified on August 8, 2017 by the third-party tester that the FCC O₂ analyzer did not meet the linearity error criteria of <15%. Due to the late notification by the 3rd party tester, an inoperative notification could not be submitted by the Refinery as required per BAAQMD Rule 1-522.4. The Refinery submitted an inoperative monitor notification on August 9, 2017 (RCA# 07E08). The CGA was re-performed on August 10, 2017 in which the FCC O₂ analyzer met the linearity error criteria of <15%.

Probable Cause: On August 2, 2017, Montrose Air Quality Services (MAQS) conducted the 3rd quarter Cylinder Gas Audit (CGA) on the Continuous Emissions Monitoring System (CEMS) serving the FCCU stack (F-300). During the CGA, the O₂ analyzer indicated a failure of the CGA while introducing a 5.56% O₂ gas. The gas was introduced to the plant CEMS by connecting a 1/4" tube to the calibration line normally used by the plant CEMS for daily calibrations. The O₂ gas was injected directly from the cylinder three separate times via a regulator and the 1/4" tube. The response from the CEMS O₂ analyzer indicated an average response of 4.46%. The percent error was 19.6%, which was higher than the allowable 15% according to 40 CFR Part 60, Appendix F requirements. The mid-range gas (8.93% O₂) was then introduced to the CEMS and the average response was 8.89% O₂. The percent error was 0.49%, which is well within the allowable 15% error. After a complete investigation of the MAQS CGA procedure, it is the opinion of MAQS that the failure of the CGA on the 5.56% O₂ gas was caused by not introducing adequate flow from the cylinder regulator to overcome the CEMS sample pump. This allowed stack gas, which is normally ~1.7% O₂, to be drawn in to the sample system. This caused the audit gas to be diluted with stack gas and led to the low reading on the O₂ analyzer. The mid-range gas was introduced from a separate cylinder and regulator, adequate flow was achieved, and the response indicated that the analyzer was reading the gas correctly. Therefore, the failure of the CGA on the 5.56% gas was caused by the tester and not by any malfunction of the CEMS O₂ analyzer. Due to a procedural error, Chevron-Richmond was not notified of the F-300 O₂ analyzer CGA failure until August 8, 2017, which led to a Title V permit deviation.

The Refinery is adding CGA lines to CEM system CGA ports where applicable. These lines will ensure that the proper gas flow is at the required pressure to match target flow on the CEM system for calibration of gas rotometers. MAQS has amended their CGA procedure checklist to show the new CGA line connections. A improvement step was added that in the event a analyzer fails criteria that a Chevron representative will be contacted immediately.

Event Started:	8/9/2017	2:39 AM	<input type="checkbox"/> Ongoing Event
Stopped:	8/9/2017	3:09 AM	
Discovered On:	8/9/2017		

Source Number:	S6016
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	
Other:	40 CFR Subpart J (60.104(a))1

Event Description:

On August 17, 2017 flaring occurred at the FCC flare (S-6016), SISO flare (S-6012) and NISO flare (S-6013) due to TKN (S-4252) recycle compressor K-500 tripping offline resulting in visible flaring. The flaring deviated from 40 CFR 60 Subpart J (60.104(a))1 because it was not due to a startup, shutdown, or malfunction, and the vent gas did not have a hydrogen sulfide concentration below 230 mg/dscm (0.10 gr/dscf).

Probable Cause:

Corrective actions or preventative steps taken:

On August 9, 2017 the TKN recycle gas compressor, K-500, tripped offline due to high liquid level in the knockout drum V-500. Operations followed emergency procedures to depressure the unit, which resulted in a flaring incident. Upon investigation it was discovered that alarms had potentially not been responded to appropriately, and a glitch in the PATIE program that Control Board Operators use to temporarily "shelve" alarms, seemed to have allowed one high level alarm to be permanently disabled. It was also discovered that the level control valve on V-500 was being operated in manual which would have required operator intervention to address the high liquid level.

The Refinery is re-evaluating the alarm system to develop a patch to fix the glitch in the PATIE system. If a patch is not available, train the Console Operators on how to prevent this glitch from occurring and develop stewardship report to catch future occurrences. The Refinery is also implementing Console Operator Routine Duties that includes clear expectation that Console Operators review all active alarms multiple times each shift. It will include Head Operator review/oversight of the Console Operator routine duties.

Event Started:	2/10/2017	<input type="checkbox"/> Ongoing Event
Stopped:	8/21/2017	
Discovered On:	8/10/2017	

Source Number:	S3230
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	26252 Parts 4 and 5
AQMD:	
Other:	

Event Description:

Chevron did not provide a final count of fugitive components installed within 30 days of start-up of S-3230, pursuant to Permit Condition 26252 Part 4, and did not provide to the District any required offsets within 14 days of that date as required pursuant to Permit 26252 Part 5.

Probable Cause:

Corrective actions or preventative steps taken:

On August 10, 2017, in response to an Air District inquiry, HES discovered that the final list of fugitive components for the project to build T-3228 had not been submitted within 30 days following start-up as required by Permit Condition 25848. The fugitive component count was determined and submitted to the BAAQMD on August 21, 2017. An investigation determined that the roles and responsibilities for implementing conditions in a newly acquired Air District permit, were not well defined and did not give direction for project turnover when managed by outside consultants. Therefore, upon completion of tank construction the follow up items were left unassigned and were not tracked or properly managed.

The Refinery is in the process of developing a written procedure for tracking and implementing requirements in Air District ATCs and PTOs. The procedure will give direction to the Refinery Permitting Team and its consultants to assign roles and responsibilities for tracking and implementation requirements in Air District ATCs and PTOs.

Event Started:	8/26/2017 7:00 AM	<input type="checkbox"/> Ongoing Event
Stopped:	8/27/2017 1:00 AM	
Discovered On:	8/26/2017	

Source Number:	S4285
Abatement Device:	A0014
Emission Point:	

May have resulted in a violation of:	
Permit:	Title V permit condition #1106
AQMD:	
Other:	

Event Description:

The electrostatic precipitator (ESP) (A-0014) is used for abating Particulate Matter (PM) emissions from the Fluid Catalytic Cracking (FCC) Plant (S-4285) which is comprised of sixteen (16) transformer rectifier (TR) sets. On August 26, 2017, at 0656 hours, the Refinery's Fluid Catalytic Cracking (FCC) unit (S4285) shutdown due to a power outage. As a result, the ESP was operating with greater than two TR sets below 200mA and the remaining TR sets were less than 296mA averaged over a 3 hour period. The immediate shutdown of the TR sets is seen as an industry-wide practice to remove the potential source of ignition.

Probable Cause:

On August 26, 2017, during heavy fog conditions the refinery Standard Oil power line opened at 06:52hrs causing substations #3 and #6 to go to single line feed. Approximately 22 minutes later the line experienced another momentary power loss. The two line faults caused a voltage dip in the system that was seen throughout the Refinery's electrical grid. The power dips caused several loads in FCC and SRU to go off line impacting a loss of critical equipment. The loss of critical equipment resulted in the FCC unit having to shutdown to a safe park mode. In this mode the ESP is shutdown immediately as a recognized safe practice to remove the potential source of ignition.

The Refinery's electrical distribution coordinator was contacted immediately, and Utilities Operators worked to return the Refinery electrical system back to normal service. The other Refinery substations were inspected to identify any other impact from the power dip. FCC feed was re-introduced at 19:20hrs once power was restored and stable to the unit.

Event Started:	8/26/2017 3:00 PM	<input type="checkbox"/> Ongoing Event
Stopped:	8/26/2017 6:00 PM	
Discovered On:	8/26/2017	

Source Number:	S4285
Abatement Device:	A0014
Emission Point:	

May have resulted in a violation of:	
Permit:	Title V permit condition #1106
AQMD:	
Other:	

Event Description:

On August 26, 2017, at 15:00 hours, the Refinery's Fluid Catalytic Cracking (FCC) unit (S-4285) shutdown due to a power outage. As a result, the Electrostatic Precipitator (ESP) (A-0014) inlet temperature dropped below 550F averaged over any one hour period. The immediate shutdown of the ESP TR sets, is seen as an industry-wide practice to remove the potential source of ignition.

Probable Cause:

On August 26, 2017, during heavy fog conditions the refinery Standard Oil power line opened at 06:52hrs causing substations #3 and #6 to go to single line feed. Approximately 22 minutes later the line experienced another momentary power loss. The two line faults caused a voltage dip in the system that was seen throughout the Refinery's electrical grid. The power dips caused several loads in FCC and SRU to go off line impacting a loss of critical equipment. The loss of critical equipment resulted in the FCC unit having to shutdown to a safe park mode. In this mode the ESP is shutdown immediately as a recognized safe practice to remove the potential source of ignition.

The Refinery's electrical distribution coordinator was contacted immediately, and Utilities Operators worked to return the Refinery electrical system back to normal service. The other Refinery substations were inspected to identify any other impact from the power dip. FCC feed was re-introduced at 19:20hrs once power was restored and stable to the unit.

Event Started:	8/31/2017	<input type="checkbox"/> Ongoing Event
Stopped:	5/25/2017	
Discovered On:	8/31/2017	

Source Number:	S4285
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	
Other:	40 CFR 60.482-7(c)(2)

Event Description: On August 31, 2017 during an LDAR Consent Decree Audit two valves, one at FCC unit (S-4285) and the other at POLY (S-4292) were discovered to be out of compliance with inspection requirements outlined in 40 CFR 60.482-7(c)(2). The FCC valve (101-01291-V) had an excess reading of over 10,000ppm on July 27, 2015, but the follow up monthly inspections were not triggered by LeakDAS. The next inspection was conducted on Oct. 1, 2015 with a result of 0ppm. The Poly plant valve(110-01237-V) had an excess reading of over 10,000ppm on July 7, 2016. A successful inspection was completed in August, 2015, but the LeakDAS database did not trigger the second follow up inspection. The next inspection was conducted Dec. 13, 2016 with a reading of 25ppm.

Probable Cause: A system glitch was discovered in the LeakDAS database system that is used to track and schedule inspections for approximately 450,000 VOC components at the Richmond Refinery. When the two valves in question had inspection results of greater than 10,000 ppm VOC, the program should have triggered monthly re-inspections until there were two successful monthly inspections, then reverted back to quarterly inspection intervals. Due to a software glitch the LeakDAS program did not trigger all of the additional valve inspections and they were inadvertently missed.

Both valves have been re-inspected and passed with results of 0.0 and 25.0ppm VOC. After discovery of the issue, the Vendor updated the LeakDAS software to address the scheduling glitch. The new software has been uploaded to the Richmond LeakDAS database.

Event Started:	9/1/2017 1:58 PM	<input type="checkbox"/> Ongoing Event
Stopped:	9/1/2017 9:55 PM	
Discovered On:	9/1/2017	

Source Number:	S6010
Abatement Device :	
Emission Point:	

May have resulted in a violation of :
Permit:
AQMD: BAAQMD 12-11-502.3(a)
Other: 40CFR 60 Subpart J (60.104(a))

Event Description: The following deviations are being submitted in an abundance of caution to meet reporting requirements as the investigation is ongoing. On September 1, 2017 flaring occurred at the LFSFO flare (S-6010). The flaring may have potentially deviated from 40CFR 60 Subpart J (60.104(a)) (1) because it may not have been due to startup, shutdown, or malfunction, and the vent gases did not have a hydrogen sulfide concentration below 230mg/dscm (0.10g/dscf). Additionally, a review of the flare flow data indicates that the initial sample was collected approximately 1 minute prior to the vent gas exceeding 330 scfm for 15 consecutive minutes. Therefore, the sample collected fell outside of the BAAQMD 12-11-502.3(a) requirement. However, the sample that was taken is considered representative for the flaring event.

Probable Cause:
Corrective actions or
preventative steps taken:

On September 1, 2017, the Chevron Richmond Refinery experienced unprecedented high ambient temperatures with an indicated daytime high of 107 degrees Fahrenheit. As a result of the effects of the unusually high ambient temperatures on the D&R processing units, there was a significant increase in the amount of overhead vapors. At approximately 13:58 hours, vapor production from the #4 Crude Unit increased above the capacity of the available flare gas recovery compressors. Process moves were initiated to mitigate relief pressure which resulted in additional flows to be routed to the Jet Hydrotreater. The surplus of liquid overwhelmed V-240 and resulted in the high liquid level shutdown of flare gas recovery compressor K-242, at approximately 15:00 hours. Flaring ceased at approximately 21:55 hours when liquid levels were reduced and flare gas recovery compressor K-242 was able to be restarted.

The LFSO flare sample system has triggers that can be initiated either by Distributed Control System (DCS) logic or manually by the Console Board Operator (CBO). Upon investigation, it was discovered that the CBO prematurely initiated a manual flare sample approximately 1 minute prior to the vent gas exceeding 330 scfm for 15 consecutive minutes. This decision was based on the flaring inception rather than the flow requirements of BAAQMD Regulation 12, Rule 11, 502.3(a). Unknown to the CBO, the premature sample did not fulfill the requirements of BAAQMD Regulation 12, Rule 11.

Prior to, during, and after the flaring, operations continued to reduce feed to the #4 Crude Unit to limit the impact of high ambient temperature on the affected units. The Refinery Operating Committee is evaluating the Hot Weather Contingency Plan for posturing plants so that further mitigations are in place to prevent potential flaring and/or environmental incidents. Furthermore, as a result of the premature flare sample, refresher training was conducted with the plant operators to confirm they were comfortable with the auto-sampler logic, and fully understood the flare sample requirements.

Event Started:	9/7/2017	10:00 PM	<input type="checkbox"/> Ongoing Event
Stopped:	9/9/2017	1:00 AM	
Discovered On:	9/7/2017		

Source Number:	S4155
Abatement Device:	
Emission Point:	

May have resulted in a violation of:
Permit: 8773
AQMD: 40CFR60.104(a)(1)
Other:

Event Description: On September 7, 2017 #3H2S plant in the FCC (S-4285) experienced a plant upset resulting in H2S exceedance in fuel gas drums V-475 and V-701. V-475 fuel gas drum exceeded its 50ppm 24-hr average H2S limit from September 8, 2017 at 0100hrs to September 9, 2017 at 0100hrs. V-475 fuel gas drum exceeded the 160 ppm 3-hr average H2S limit from September 7, 2017 at 2300hrs to September 8, 2017 at 0400hrs. V-701 fuel gas drum exceeded its 160 ppm 3-hr average H2S limit from September 7, 2017 at 2200 hrs to September 8, 2017 at 0500hrs. The source affected by the excess of the 24-hour 50 ppm H2S limit is F-135 (S-4155). The sources affected by the excess of the 3-hour 160 ppm H2S limit at V-701 include 1-Boller (S-4129), 3-Boller (S-4131), 4-Boller (S-4132), 5-Boller (S-4133) and 7-Boller (S-4135) and Coden 1000 Train HSRG (S-4351). The sources affected by the excess of the 3-hour 160 ppm H2S limit at V-475 include F-410 (S-4159), F-420 (S-4160), F-710 (S-4167), F-500 (S-4161), S-4162 & S-4163, F-600 (S-4164), S-4165 & S-4166, F-730 (S-4168), F-731 (S-4169), F-100 (S-4152), F-120 (S-4154), F-135 (S-4155), F-340 (S-4158), F-305 (S-4170), F-1251 (S-4333), S-4334 & S-4335, F-1361 (S-4330), S-4331 & S-4332, F-1551 (S-4336, S-4337, S-4338 & S-4339), F-1650 (S-4339), F-651 (S-4188) and F-661 (S-4189).

This updated Deviation is being submitted to correct an administrative error. The original date of occurrence was submitted as August 7, 2017 but has been corrected to read September 7, 2017.

Probable Cause: The FCC #3H2S plant in the FCC experienced a plant upset caused by C-220 amine regenerator bottoms level indication failure. The false level indication on C-220 began to fill the column to a high level leading to poor H2S removal in the amine regenerator. The poor stripping of H2S in the amine regenerator resulted in H2S breakthrough from absorber C-200 into the Refinery fuel gas system. It was found that the level indication failure was due to plugging at both the level transmitter taps and the gage glass on C-220.

Operations reduced the FCC plant feed rates and made the necessary corrective actions to control and lower the H2S content in the fuel gas system. It was found that two orifice plates upstream of the level indicators were the source of the plugging. Both orifice plates have been removed to aid in the prevention of future plugging of the level transmitter taps.

Event Started:	9/7/2012	
Stopped:	9/11/2017	<input type="checkbox"/> Ongoing Event
Discovered On:	9/7/2017	

Source Number:	S4429
Abatement Device:	
Emission Point:	

May have resulted in a violation of:
Permit: Rule 8-18-402.1
AQMD: 40 CFR 60.482.7
Other:

Event Description: On September 7, 2017, during an LDAR Consent Decree Audit, one (1) valve at the #8 Plant was discovered to be undocumented and missing from the LDAR tracking database.

Probable Cause: The addition of the valve component was not correctly documented so was not added to the Refinery LDAR database (LeakDas). There are approximately 450,000 VOC components tracked in the Refinery, without being added to the LeakDas database it was not tracked or scheduled with the other VOC components at the Richmond Refinery.

After review it was determined that the valve was not needed, it was removed from service verified and inspected by the Air Compliance Inspection Group. A management of change will be initiated to reflect the changes in the field and update associated drawings and documents.

Event Started:	9/10/2017	<input type="checkbox"/> Ongoing Event
Stopped:	9/10/2017	
Discovered On:	9/11/2017	

Source Number:	S4163
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	PC#16686
AQMD:	2-1-301
Other:	

Event Description: On September 11, 2017 during data review it was discovered that on September 10, 2017 F-530 (S-4163) exceeded its daily firing rate limit of 1464 MMBtu/D HHV.

Probable Cause: The investigation found that there was not clear guidance regarding operations response to an F-530 furnace daily firing rate exceedance. The current DCS control system has an alarm set up for hourly average firing duty, but it does not account for the actual calendar day average limit. After review it was noted that there wasn't specific guidance in the critical environmental variable warnings or XAN's alerts identifying corrective actions to be taken or that the consequence of deviation could result in a Title V deviation.

- The Refinery is reviewing the following mitigations to aid in the prevention of future occurrences:
- Developing a tool to monitor current 24 hour average firing rate and predict daily average.
 - Updating Critical Environmental Variable warnings to include corrective actions and a warning for a Title V permit consequence.
 - If possible, create a Title V Furnace Firing Duty page for the Refinery process monitoring Index program.
 - Review the Electronic Operating Manual to add firing rate console alarms to the Consequence of Deviation table and include corrective actions.
 - Update the XAN's alert distribution list for furnace firing rates to include appropriate personnel.

Event Started:	10/14/2017
Stopped:	10/16/2017 11:00 PM <input type="checkbox"/> Ongoing Event
Discovered On:	10/14/2017

Source Number:	S4285
Abatement Device :	A0014
Emission Point:	

May have resulted in a violation of :	
Permit:	Title V permit condition #1106
AQMD:	
Other:	

Event Description:

The electrostatic precipitator (ESP) (A-0014) is used for abating Particulate Matter (PM) emissions from the Fluid Catalytic Cracking (FCC) Plant (S-4285) which is comprised of sixteen (16) transformer rectifier (TR) sets. Following an unexpected shutdown for the Refinery's Fluid Catalytic Cracking (FCC) unit (S-4285) on October 14, 2017, the FCC Electrostatic Precipitator (A-0014) required an emergency shutdown. De-energizing the ESP during unstable operations is an industry wide safety standard. As a result, the ESP operated with greater than 2 TR sets below 200 mA and the remaining TR sets were less than 296 mA averaged over a three hour period from 10/14/17 at 2300 hours to 10/16/17 at 2300 hours.

Probable Cause: On October 14, 2017 the FCC (S-4285) substation bus unexpectedly lost power due to a bus ground relay activating resulting in a fault that caused a loss of power. Upon inspection of the affected bus a rodent was found to have entered the 12kv breaker causing the ensuing fault which led to the loss of power. The breaker was damaged from the fault and led to a complete power loss at the Alky, Poly, Butamer, and Yard DIB units and a partial loss of power at the FCC. In response to the loss of power the FCC plant was moved to a safe posture in which the ESP is de-energized as an industry recognized safety measure.

The 12kv breaker was replaced with a spare to restore power. Operations re-established plant operations and started the FCC on October 16, 2017.

Event Started: 10/14/2017
 Stopped: 10/16/2017 7:00 PM ☐ Ongoing Event
 Discovered On: 10/14/2017

Source Number: S4285
 Abatement Device : A0014
 Emission Point: _____

May have resulted in a violation of:
 Permit: Title V permit condition #1106
 AQMD: _____
 Other: _____

Event Description:

Following an unexpected shutdown for the Refinery's Fluid Catalytic Cracking (FCC) unit (S-4285) on October 14, 2017, the FCC Electrostatic Precipitator (A-0014) required an emergency shutdown. De-energizing the ESP during unstable operations is an industry wide safety standard. As a result, the ESP inlet temperature 1-hr average dropped below 550degF on 10/14/17 at 2300 hours to 10/15/17 at 2300 hours, as well as on 10/16/17 at 0100 hours to 10/16/17 at 1900 hours.

Probable Cause: On October 14, 2017 the FCC (S-4285) substation bus unexpectedly lost power due to a bus ground relay activating resulting in a fault that caused a loss of power. Upon inspection of the affected bus a rodent was found to have entered the 12kv breaker causing the ensuing fault which led to the loss of power. The breaker was damaged from the fault and led to a complete power loss at the Alky, Poly, Butamer, and Yard DIB units and a partial loss of power at the FCC. In response to the loss of power, the FCC plant was moved to a safe posture in which the ESP is de-energized as an industry recognized safety measure.

The 12kv breaker was replaced with a spare to restore power. Operations re-established plant operations and started the FCC on October 16, 2017.

Event Started: 10/23/2017 1:00 PM
 Stopped: 10/23/2017 2:00 PM ☐ Ongoing Event
 Discovered On: 10/24/2017

Source Number: S4229
 Abatement Device : _____
 Emission Point: _____

May have resulted in a violation of:
 Permit: _____
 AQMD: 9-1-307
 Other: _____

Event Description: On October 23, 2017 the SRU #3 Train (S-4229) had SO2 excess emissions above the 250 ppm limit.

Probable Cause: The SRU #3 Train main air blower, K-2301, had developed a leak in the governor gear box lube oil tubing. While operators were working to inspect the leak location so that repairs could be made, the blower tripped off line. The investigation postulates that bumping the lube oil tubing may have led to a momentary drop in lube oil pressure which caused the blower to shutdown. The blower trip caused a low differential pressure resulting in the shutdown of the front end of the SRU #3 train and the SO2 excess.

The Refinery immediately altered operations to address and manage H2S feed due to the loss of the train until it was brought back on line. The train was immediately stabilized and the governor gear box lube oil tubing was repaired. Feed to the #3 Train was re-introduced within the hour.

Event Started:	10/25/2017	<input type="checkbox"/> Ongoing Event
Stopped:	10/25/2017	
Discovered On:	10/26/2017	

Source Number:	54393
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	Regulation 1-301
Other:	H85 Code - 41700

Event Description: On October 26, 2017, the Chevron Refinery was issued a Public Nuisance NOV (A56424) alleging the bioreactor by BAAQMD Inspector Ying Yu for 5 confirmed complaints on October 25, 2017.

Probable Cause: On October 25, 2017, BAAQMD Inspector Ying Yu contacted the Chevron Richmond Refinery Shift Leader (RSL) informing them of 5 confirmed odor complaints originating from locations in the nearby community of Point Richmond between the hours of 17:00 and 21:45.

Corrective actions or preventative steps taken: Of the 5 complaints confirmed on October 25, 2017, none resembled an odor typical of a Refinery or the Bioreactor. The odor descriptions given such as "poop" and "chemical" are inconsistent with any potential odors associated with the Refinery Bioreactor. Moreover, the complaints given resembled descriptions consistent with Chevron's off-site findings. Chevron likewise is concerned about identifying the cause of the odor complaints and preventing reoccurrence but these complaints are inconsistent and do not provide reasonable contention that the Refinery Bioreactor was the source.

Based on the Refinery's investigation into these odor complaints, the Refinery disagrees with the Inspector's confirmation of the odor complaints as being associated with the Refinery Bioreactor. Chevron shares the BAAQMD's concern and sense of urgency in identifying the cause of the odor complaints and preventing reoccurrence. However, the Refinery operates in an area where multiple potential odor sources, including various industries, train yards, water treatment facilities, composting and landfill operations surround an enclave of residential housing. The Refinery contends that in many cases, odors that emanate from other locations, and that are reported to the District, are often incorrectly attributed to the Refinery.

Chevron would appreciate the opportunity to conduct the odor investigation jointly with the Inspector during times when Chevron is suspected rather than react retroactively to an investigation that has already concluded several hours prior. The Refinery continues to explore opportunities to mitigate potential odors associated with its processes. The Refinery maintains and employs deodorant dispersal nozzles to assist with surrounding odors. At the time of the alleged violation, the Refinery was operating at a steady state with no surrounding community monitor alerts. There were no activities at the Refinery that would have increased the load on the Refinery effluent system, or would have caused any odors. Additionally, the Refinery was utilizing its deodorant system full time while winds were coming from the north and blowing towards Point Richmond. Given the nature of the odor complaints, the stable operations of the Refinery that day, the absence of any air monitoring alerts the Refinery maintains that Notice of Violation #A56424 was issued improperly.

Event Started:	10/24/2017	<input type="checkbox"/> Ongoing Event
Stopped:	10/24/2017	
Discovered On:	10/26/2017	

Source Number:	S4393
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	Regulation 1-301
Other:	H8S Code - 41700

Event Description: On October 26, 2017, the Chevron Refinery was issued a Public Nuisance NOV (A55788) alleging the bioreactor by BAAQMD Inspector Jacqueline Huynh for 10 confirmed complaints on October 24, 2017.

Probable Cause: On October 24, 2017, BAAQMD Inspector Jacqueline Huynh contacted the Chevron Richmond Refinery Shift Leader (RSL) informing them of 10 confirmed odor complaints originating from locations in the nearby community of Point Richmond between the hours of 18:00 and 21:00.

Corrective actions or preventative steps taken:

Of the 10 complaints confirmed on October 24, 2017, only two resembled an odor typical of a Refinery and were described as "sour oily" and "burnt gasoline". However, these odor descriptions are inconsistent with any potential odors associated with the Refinery Bioreactor. Moreover, the complaints given resembled descriptions consistent with Chevron's off-site findings which were described as "sewage". Chevron likewise is concerned about identifying the cause of the odor complaints and preventing recurrence but these complaints are inconsistent and do not provide reasonable contention that the Refinery Bioreactor was the source.

Based on the Refinery's investigation into these odor complaints, the Refinery disagrees with the Inspector's confirmation of the odor complaints as being associated with the Refinery Bioreactor. Chevron shares the BAAQMD's concern and sense of urgency in identifying the cause of the odor complaints and preventing recurrence. However, the Refinery operates in an area where multiple potential odor sources, including various industries, train yards, water treatment facilities, composting and landfill operations surround an enclave of residential housing. The Refinery contends that in many cases, odors that emanate from other locations, and that are reported to the District, are often incorrectly attributed to the Refinery.

Chevron would appreciate the opportunity to conduct the odor investigation jointly with the Inspector during times when Chevron is suspected rather than react retroactively to an investigation that has already concluded several hours prior. The Refinery continues to explore opportunities to mitigate potential odors associated with its processes. The Refinery maintains and employs deodorant dispersal nozzles to assist with surrounding odors. At the time of the alleged violation, the Refinery was operating at a steady state with no surrounding community monitor alerts. There were no activities at the Refinery that would have increased the load on the Refinery effluent system, or would have caused any odors. Additionally, the Refinery was utilizing its deodorant system full time while winds were coming from the north and blowing towards Point Richmond. Given the nature of the odor complaints, the stable operations of the Refinery that day, the absence of any air monitoring alerts the Refinery maintains that Notice of Violation #A55788 was issued improperly.

Event Started:	10/23/2017	<input type="checkbox"/> Ongoing Event
Stopped:	10/23/2017	
Discovered On:	10/26/2017	

Source Number:	S4393
Abatement Device :	
Emission Point:	

May have resulted in a violation of :	
Permit:	
AQMD:	Regulation 1.301
Other:	H8S Code - 41700

Event Description: On October 26, 2017, the Chevron Refinery was issued a Public Nuisance NOV (A55787) alleging the bioreactor by BAAQMD Inspector Jacqueline Huynh for 5 confirmed complaints on October 23, 2017.

Probable Cause: On October 23, 2017, BAAQMD Inspector Jacqueline Huynh contacted the Chevron Richmond Refinery Shift Leader (RSL) informing them of 5 confirmed odor complaints originating from locations in the nearby community of Point Richmond between the hours of 17:30 and 18:20.

Corrective actions or preventative steps taken: Of the 5 complaints confirmed on October 23, 2017, only two resembled an odor typical of a Refinery and were described as "sour oily" and "petroleum". However, these odor descriptions are inconsistent with any potential odors associated with the Refinery Bioreactor. Moreover, the complaints given resembled descriptions consistent with Chevron's off-site findings on October 24, 2017 which were described as "sewage". Chevron likewise is concerned about identifying the cause of the odor complaints and preventing reoccurrence but these complaints are inconsistent and do not provide reasonable contention that the Refinery Bioreactor was the source.

Based on the Refinery's investigation into these odor complaints, the Refinery disagrees with the Inspector's confirmation of the odor complaints as being associated with the Refinery Bioreactor. Chevron shares the BAAQMD's concern and sense of urgency in identifying the cause of the odor complaints and preventing reoccurrence. However, the Refinery operates in an area where multiple potential odor sources, including various industries, train yards, water treatment facilities, composting and landfill operations surround an enclave of residential housing. The Refinery contends that in many cases, odors that emanate from other locations, and that are reported to the District, are often incorrectly attributed to the Refinery.

Chevron would appreciate the opportunity to conduct the odor investigation jointly with the Inspector during times when Chevron is suspected rather than react retroactively to an investigation that has already concluded several hours prior. The Refinery continues to explore opportunities to mitigate potential odors associated with its processes. The Refinery maintains and employs deodorant dispersal nozzles to assist with surrounding odors. At the time of the alleged violation, the Refinery was operating at a steady state with no surrounding community monitor alerts. There were no activities at the Refinery that would have increased the load on the Refinery effluent system, or would have caused any odors. Additionally, the Refinery was utilizing its deodorant system full time while winds were coming from the north and blowing towards Point Richmond. Given the nature of the odor complaints, the stable operations of the Refinery that day, the absence of any air monitoring alerts the Refinery maintains that Notice of Violation #A55787 was issued improperly.

Event Started: 10/30/2017 3:00 PM
Stopped: 10/30/2017 5:00 PM ☐ Ongoing Event
Discovered On: 10/30/2017

Source Number: S4285
Abatement Device : A0014
Emission Point: _____

May have resulted in a violation of :
Permit: Title V permit condition #1106
AQMD: _____
Other: _____

Event Description: The electrostatic precipitator (ESP) (A-0014) is used for abating Particulate Matter (PM) emissions from the Fluid Catalytic Cracking (FCC) Plant (S-4285). On October 30, 2017, during an upset at the FCC Plant, the Electrostatic Precipitator required an emergency shutdown. As a result, the ESP operated with one TR set below 200mA and the remaining TR sets were less than 296 mA averaged over a three hour period from 1500 to 1700 hours. The immediate shutdown of the TR sets is seen as an industry-wide practice to remove the potential source of ignition.

Probable Cause: On October 30th, 2017 the FCC V-134 pressure indicator 52P1134 for the 2nd stage knock out suction pressure for K-130 wet gas compressor became very erratic which activated the Compressor Controls Corporation system (CCC) anti-surge that controls and protects K-130 WGC. The erratic pressure indication on 52P1134 caused the K-130 spillback to open up resulting in increased pressure swings on the front end of the FCC unit. The resulting plant upset caused a high CO condition in the Electrostatic Precipitator (ESP) which led Operations to shutdown the ESP per procedure as a safety precaution. The ESP being shut down resulted in the one hour TR set excursion.

FCC operations immediately worked to stabilize the pressure swings and control plant conditions. Once the plant was stable the ESP was placed back in service. Both 1st stage 52UC-131 and 2nd stage 52UC-132 anti-surge controllers are being operated in manual to protect K-130 WGC from pressure swings. Operations is evaluating potential ways to add secondary indication to compare, monitor, and check accuracy of current meter PI-134 (2nd stage suction press. indicator).

Event Started: 10/30/2017 2:00 PM
Stopped: 10/30/2017 4:00 PM ☐ Ongoing Event
Discovered On: 10/30/2017

Source Number: S4285
Abatement Device : _____
Emission Point: _____

May have resulted in a violation of :
Permit: _____
AQMD: _____
Other: _____

Event Description: On October 30, 2017, the Refinery's Fluid Catalytic Cracker (FCC) (S-4285) F-300 stack exceeded its opacity limit of 30% over the 6-minute average during the 1400 and 1500 hrs.

Probable Cause: On October 30th, 2017 the FCC V-134 pressure indicator 52P1134 for the 2nd stage knock out suction pressure for K-130 wet gas compressor became very erratic which activated the Compressor Controls Corporation system (CCC) anti-surge that controls and protects K-130 WGC. The erratic pressure indication on 52P1134 caused the K-130 spillback to open up resulting in increased pressure swings on the front end of the FCC unit. The resulting plant upset caused a high CO condition in the Electrostatic Precipitator (ESP) which led Operations to shutdown per procedure as a safety precaution. With the ESP being shut down an opacity exceedance occurred.

FCC operations immediately worked to stabilize the pressure swings and control plant conditions. Once the plant was stable the ESP was placed back in service. Both 1st stage 52UC-131 and 2nd stage 52UC-132 anti-surge controllers are being operated in manual to protect K-130 WGC from pressure swings. Operations is evaluating potential ways to add secondary indication to compare, monitor, and check accuracy of current meter PI-134 (2nd stage suction press. indicator).

Event Started:	10/30/2017 2:38 PM	<input type="checkbox"/> Ongoing Event
Stopped:	10/30/2017 2:55 PM	
Discovered On:	10/30/2017	

Source Number:	S6016
Abatement Device :	
Emission Point:	

May have resulted in a violation of :
Permit: _____
AQMD: Reg. 12-11-502.3.1 (a)
Other: _____

Event Description: On October 30, 2017, during an upset at the FCC Plant (S-4285), a flare sample from the FCC flare was not successfully pulled as required per BAAQMD Regulation 12-11-502.3.1(a).

Probable Cause: Upon investigation of this incident the sample station was evaluated by maintenance. It was found that the Flare sample return line was plugged. It was also discovered that the check valve on the bypass line that bypasses the gas returning from the sample cylinders was not working correctly. The spring in the check valve was found to be broken.

Corrective actions or preventative steps taken: Maintenance crew working on the FCC flare sample station was able to unplug the return line and replace the bypass line check valve. To aid in the prevention of any other potential mechanical failures the sample pump was replaced. The system programming logic, solenoids, and mechanical valves were tested and spare parts have been ordered for future repairs outside of the scheduled preventative maintenance program.

Event Started:	11/8/2017 2:00 PM	<input type="checkbox"/> Ongoing Event
Stopped:	11/8/2017 3:00 PM	
Discovered On:	11/8/2017	

Source Number:	S4285
Abatement Device :	A0014
Emission Point:	

May have resulted in a violation of :
Permit: _____
AQMD: _____
Other: 40CFR 60.102(a)(2)

Event Description: On November 8, 2017, the FCC Electrostatic Precipitator (A-0014) required an emergency shutdown. As a result, the F-300 stack opacity exceeded its 30% second 6-minute average limit on 11/8/17 during the 1400 clock hour with an indicated excess of 60.73%.

Probable Cause: The FCC Plant had an opacity excursion due to an emergency shutdown of K-13 Electrostatic Precipitator (ESP) due to a sudden increase in CO. Operations followed safety standards and shutdown the ESP per procedure. Investigation findings determined that the high CO was a result of a tank switch upstream resulting in an instantaneous feed composition change and flow increase. Blending and Shipping was performing a non-routine change from FCC plant dual line feed to a single line feed system, which resulted in a change in feed composition and resulted in a plant upset.

Corrective actions or preventative steps taken: The Refinery is reviewing feed system transition procedures for potential improvement updates requiring feed tanks to be tagged identifying the need for sampling and properties confirmation prior to feed switches.

Event Started: <u>12/20/2017 11:00 AM</u>
Stopped: <u>12/20/2017 12:00 PM</u> <input type="checkbox"/> Ongoing Event
Discovered On: <u>12/20/2017</u>

Source Number: <u>S4228</u>
Abatement Device: _____
Emission Point: _____

May have resulted in a violation of:
Permit: _____
AQMD: <u>9-1-307</u>
Other: _____

Event Description: On December 20, 2017 the SRU #2 Train (S-4228) had SO2 excess emissions above the 250 ppm limit from 1100 hours to 1200 hours.

Probable Cause: On December 20, 2017 at approximately 1030 hours, the Sulfur Recovery Unit (SRU) #2 train was shut down resulting in an excess of the 1-hour average 250 ppm SO2 limit. Investigation findings showed that Operations was responding to a governor issue on #3 train, when #2 train main reaction furnace tripped offline. There was a communication breakdown that occurred during the initial report between the control board operator and one of the outside area operators. The operator did not verify location with Control Board Operator and responded to SRU #2 train blower. The operator saw a dip in RPM at the blower of #2 train, so proceeded to place the blower controls in manual to catch the dip. When control of #2 train was set back to auto, the controllers output was not set appropriately which led to the #2 train shutting down on differential pressure and the exceedance of the 1-hr average 250 ppm limit.

The shift supervisor addressed the communication breakdown and held a discussion with the operator and the crew. This was done in accordance with the Refinery's operational excellence goals to gain commitment to focus on clear communication during any incident response.

Certification Statement

I certify under penalty of law that based on the information and belief formed after reasonable inquiry, the statements and information in this document and in all attachments and other materials are true, accurate, and complete.

X 	<u>Kory Judd</u>	<u>General Manager Richmond Refinery</u>	<u>24 Jan 2018</u>
Signature of Responsible Official	Print Name	Title	Date

BAAQMD Title V Permit 6 Month Monitoring Report

From 6/1/2017 to 12/31/2017

A0010 Chevron Richmond Refinery

Facility Address:

841 Chevron Way

Mailing Address:

PO Box 1272

City: Richmond

State: CA

Zip Code: 94801-

City: Richmond

State: CA

Zip Code: 94802-0272

Contact: Juliana, Robin W

Title: Compliance Technician

Phone: (510) 242-3895

Inoperable monitors as defined by BAAQMD Regulations 1-522 and 1-523 for the reporting period are summarized below:

Started	Stopped	Source (S#)	Abatement Device (A#)	Emission Point (P#)	CEM	GLM	Fuel Gas	Parametri	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	LTA	Opacity/	Lead	Steam Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
6/2/2017 2:51 PM	6/7/2017 10:50 AM	S6051	✓						✓																		✓
Discovered On: 6/5/2017																											
Event Description: UPDATE (RCA#07D56): Resumption of Monitoring; repairs were completed and the hydrocarbon analyzer returned to service on 6/7/17 at 1050 hours.																											
The Alky Cooling Water Tower hydrocarbon analyzer (12A11400) went inoperative on 6/2/17 at 1451 hours. Incident is ongoing. Notification of resumption of monitoring will be submitted once repairs are complete.																											
6/5/2017 1:26 AM	6/6/2017 7:10 AM	S4039	✓						✓													✓					
Discovered On: 6/6/2017																											
Event Description: The F-3560 fuel gas flow meter was inoperative from 6/5/17 at 0126 hours to 6/6/17 at 0710 hours.																											
6/22/2017 8:32 AM	6/23/2017 3:44 PM	S4342	✓					✓																			
Discovered On: 6/22/2017																											
Event Description: On June 22, 2017 at 0832 hours F-1551 Nox analyzer became inoperative. Analyzer repaired and back in service on June 23, 2017 at 1544 hours.																											
6/30/2017 11:29 AM	7/1/2017 1:32 PM	RLW	✓						✓																	✓	
Discovered On: 7/3/2017																											
Event Description: The Long Wharf temperature indicator, 20T1019, became inoperative on 6/30/2017 at 1129 hours. Analyzer repaired and back in service on 7/1/2017 at 1332 hours.																											
7/3/2017 8:25 AM	7/5/2017 7:49 AM	S4171	✓					✓																			
Discovered On: 7/5/2017																											
Event Description: The F-355 361 West NOx analyzer became inoperative on 7/3/17 at 0825 hours; the analyzer was returned to service on 7/5/2017 at 0749 hours.																											
7/8/2017 10:51 AM	7/9/2017 2:21 PM	RLW	✓						✓																	✓	
Discovered On: 7/10/2017																											
Event Description: Long Wharf parametric analyzer 20T1019 went inoperative on 7/8/2017 at 1051 hours. Analyzer repaired and back in service on 7/9/2017 at 1421 hours.																											

Started	Stopped	Source (S#)	Abatement Device (A#)	Emission Point (P#)	CEM	GLM	Fuel Gas	Parametri	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opaciv/ LTA	Lead	Steam Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauss Press.	
7/27/2017 9:10 AM	7/28/2017 10:29 AM	S6013																									
Discovered On: 7/31/2017																											
Event Description: The NISO flare sample station became inoperative on 7/27/17 at 0910 hours. The monitor came back into service on 7/28/17 at 1029 hours.																											
8/2/2017 1:51 PM	8/10/2017 8:22 AM																										
Discovered On: 8/8/2017																											
Event Description: RESUMPTION OF MONITORING: REFERENCE RCA # 07E08 The FCC O2 analyzer passed its CGA with a linearity error criteria of <15% on of August 10, 2017 at 0822 hours.																											
FCC O2 analyzer is inoperative as of August 2, 2017 at 1351 hours. The Cylinder Gas Audit (CGA) performed on August 2, 2017 did not meet the linearity error criteria of <15%.																											
8/13/2017 8:00 AM	8/14/2017 8:30 AM	S4228																									
Discovered On: 8/14/2017																											
Event Description: The SRU #2 SO2 analyzer went inoperative on 8/13/17 at approximately 0800 hours. Repairs were made and the analyzer had a successful calibration on 08/14/17 at 0830 hours.																											
8/19/2017 4:00 AM	8/21/2017 7:46 AM	S4171																									
Discovered On: 8/21/2017																											
Event Description: On August 19, 2017 at 0400 hours F355 360 W CO failed calibration. On Monday August 21, 2017 at 0746 hours the monitor was calibrated and resumed operation.																											
9/4/2017 3:58 AM	9/5/2017 12:41 PM	S4159																									
Discovered On: 9/5/2017																											
Event Description: The F-410/420 Nox analyzer failed calibration 9/4/17 at 0358 hours. The Nox analyzer returned to service 9/5/17 at 1241 hours																											
9/7/2017 6:47 PM	9/9/2017 8:00 AM	S4341																									
Discovered On: 9/8/2017																											
Event Description: The F-1361 O2 analyzer became inoperative on 09/07/17 at 1847 hours. The O2 analyzer was repaired and returned to service on 09/09/17 at 0800 hours.																											
9/30/2017 3:58 PM	10/2/2017 12:06 PM	S4229																									
Discovered On: 10/2/2017																											
Event Description: The SRU #3 O2 analyzer went inoperative on 9/30/17 at approximately 1558 hours. Repairs were made and the analyzer had a successful calibration on 10/2/17 at 1206 hours.																											
10/13/2017 5:35 AM	10/14/2017 7:00 AM	S4285																									
Discovered On: 10/16/2017																											
Event Description: The V-65 O2 analyzer became inoperative on 10/13/17 at 0535 hours; the V-65 O2 analyzer was returned to service on 10/14/17 at 0700 hours.																											
10/22/2017 10:17 AM	10/23/2017 3:11 PM	S4171																									
Discovered On: 10/23/2017																											
Event Description: F355 360 E Nox monitor became inoperative on October 22, 2017 at 1017 hours. The monitor was repaired and back in service on October 23, 2017 at 1511 hours.																											
10/23/2017 1:00 PM	10/23/2017 2:00 PM	S4229																									
Discovered On: 10/24/2017																											
Event Description: On October 23 2017, for the 1300 clock hour the SRU 3 SO2 emissions monitor indicated an excess of its 250 ppm SO2 limit.																											



Started	Stopped	Source (S#)	Abatement Device (A#)	Emission Point (P#)	CEM	GLM	Gas	Fuel	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	LTA	Opacity	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC	Gauge Press.
10/27/2017 4:23 PM	10/29/2017 7:34 AM	S6016			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 10/30/2017																												
Event Description: Update Regarding RCA# 07F15 : Repairs were complete and FCC flare flow meter was returned to service on 10/29/2017 at 0734 hours																												
The FCC Flare flow meter became inoperative on 10/27/17 at 1623 hours and is currently ongoing. Resumption of monitoring to follow when repairs are complete																												
10/28/2017 10:48 PM	11/9/2017 2:00 PM	S6016			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 10/30/2017																												
Event Description: The FCC Flare sample station became inoperative on 10/28/17 at 2248 hours and is currently ongoing. The flare sample station is part of the Flare Monitoring System. Resumption of monitoring to follow when repairs are complete. The monitor returned to service on 11/9/2017 at 1400 hours.																												
11/4/2017 6:08 AM	11/6/2017 3:17 PM	S4167			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 11/6/2017																												
Event Description: The F-710 O2 monitor became inoperative on November 4, 2017 at 0608 hours. The monitor was repaired and back in service on November 6, 2017 at 1517 hours.																												
11/4/2017 6:20 AM	11/6/2017 10:10 AM	S4159			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 11/6/2017																												
Event Description: The F-410/420 O2 monitor became inoperative on November 4, 2017 at 0620 hours. The monitor was repaired and back in service on November 6, 2017 at 1010 hours.																												
11/20/2017 5:30 AM	11/21/2017 8:37 AM	S4352			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 11/21/2017																												
Event Description: On November 20, 2017 Cogeneration Train 2000 CO monitor became inoperative at 0530 hours. The monitor returned to service on November 21, 2017 at 0837 hours.																												
11/28/2017 6:03 AM	11/30/2017 10:54 AM	V-870			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 11/29/2017																												
Event Description: UPDATE to RCA#07F51: Repairs were completed and the V-870 BTU analyzer returned to service on 11/30/17 at 1054 hours.																												
The V-870 BTU analyzer became inoperative on November 28, 2017 at 0603 hours.																												
12/15/2017 1:58 PM	12/18/2017 3:14 PM	S4062			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 12/16/2017																												
Event Description: The F410/447 NOx monitor became inoperative on December 15, 2017 at 1358 hours. The monitor was repaired and back in service on December 18, 2017 at 1514 hours.																												
12/21/2017 5:54 AM	12/22/2017 1:45 PM	GG H2S			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discovered On: 12/22/2017																												
Event Description: The Golden Gate GLM H2S analyzer went inoperative on December 21, 2017 at 0554 hours. Repairs were made and the analyzer returned to service on December 22, 2017 at 1345 hours.																												

Certification Statement

I certify under penalty of law that based on the information and belief formed after reasonable inquiry, the statements and information in this document and in all attachments and other materials are true, accurate, and complete.

X 

Kory Judd **General Manager Richmond Refinery**

Signature of Responsible Official Print Name

Title

24 Jan 2018

Date

